



MINISTERO DELL'INDUSTRIA DEL COMMERCIO E DELL'ARTIGIANATO
DIREZIONE GENERALE PER LO SVILUPPO PRODUTTIVO E LA COMPETITIVITA'
UFFICIO ITALIANO BREVETTI E MARCHI

BREVETTO PER MODELLO INDUSTRIALE

D' UTILITA'
N. 00232876

Il presente brevetto viene concesso per il modello oggetto della domanda sotto specificata:

| num. domanda | anno | U.P.I.C.A. | data pres. domanda | classifica |
|-----------------|------|------------|-----------------------|------------|
| 000072 | 1993 | BOLOGNA | 30/03/1993 | B62J |

TITOLARE ZEN PIETRO A ROSSANO VENETO (VICENZA)

RAPPR. TE PEDERZINI PAOLO

INDIRIZZO BUGNION S.P.A.
VIA GOITO 18
40126 BOLOGNA

TITOLO SELLA VENTILATA PER BICICLETTA E KIT PER LA
SUA REALIZZAZIONE.

Roma, 21 GENNAIO 2000

IL DELEGATO ALLA FIRMA
ING. GIORGIO ROMANI

RIASSUNTO MODELLO DI UTILITÀ CON DISEGNO PRINCIPALE, DESCRIZIONE E RIVENDICAZIONI

NUMERO DOMANDA 1309311 000072

REG. E

DATA DI DEPOSITO 13/09/1993

NUMERO BREVETTO

DATA DI RILASCIO

D. TITOLO

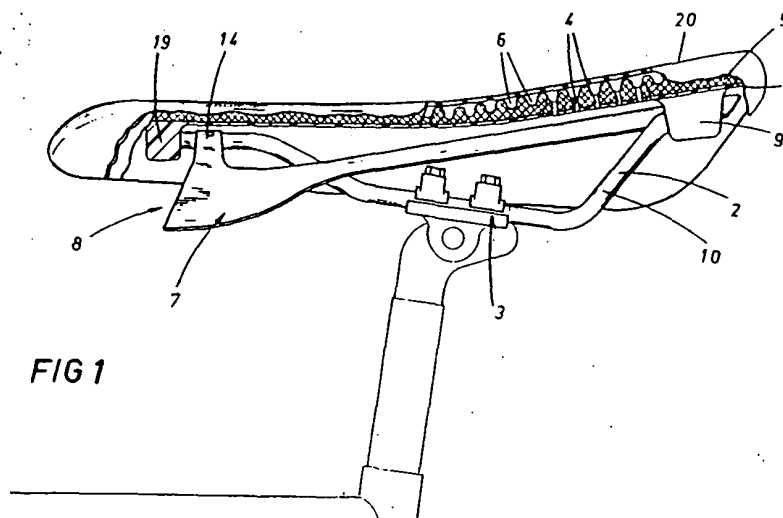
SELLE VENTILATA PER BICICLETTA E KIT PER LA SUA REALIZZAZIONE.

L. RIASSUNTO

La sella per bicicletta è costituita da una scocca (1) meccanicamente resistente e provvista di fori passanti (4) distribuiti almeno in corrispondenza delle zone destinate all'appoggio, ed è dotata, a contatto con la sua superficie superiore, di uno strato (5) permeabile all'aria per il tramite di una pluralità di interstizi (6); la sella, inoltre, è dotata di un canale collettore d'aria (7), associabile o associato inferiormente alla detta scocca (1), e chiuso sostanzialmente a contatto con la superficie inferiore della scocca almeno sulla porzione posteriore di quest'ultima, definente con la superficie inferiore della scocca stessa, almeno in corrispondenza dei detti fori (4), una camera aperta verso la parte anteriore della sella, in modo da costituire, in corrispondenza di un avanzamento della bicicletta, un canale convogliatore d'aria con entrata (8) nella detta parte anteriore ed uscita attraverso i detti fori (4). (FIG.1).

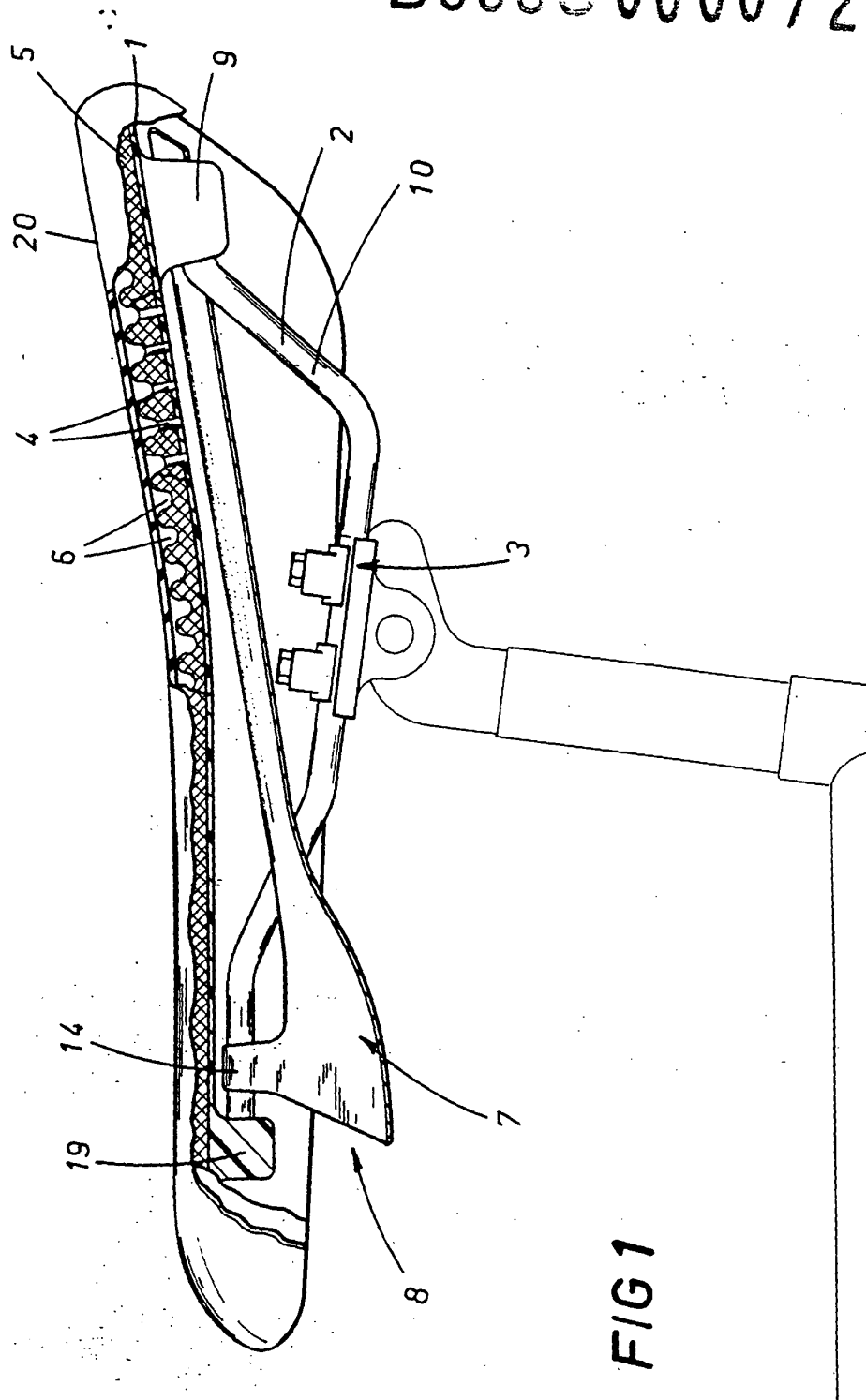
M. DISEGNO

UFFICIO PROVINCIALE INDUSTRIA
COMMERCIO E ARTIGIANATO
DI BOLOGNA
UFFICIO BREVETTI
IL FUNZIONARIO



Geom. Paolo FEDRIZZI
ALBO - prot. n. 477

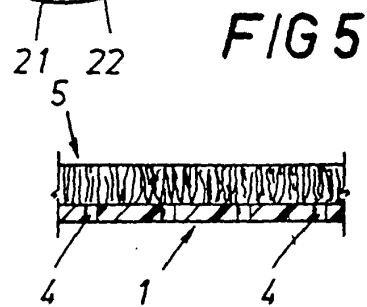
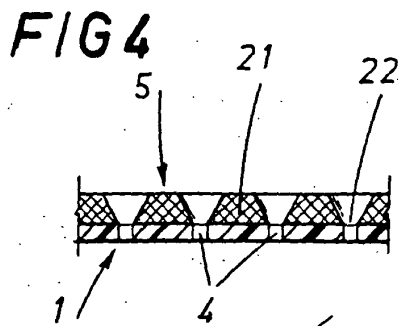
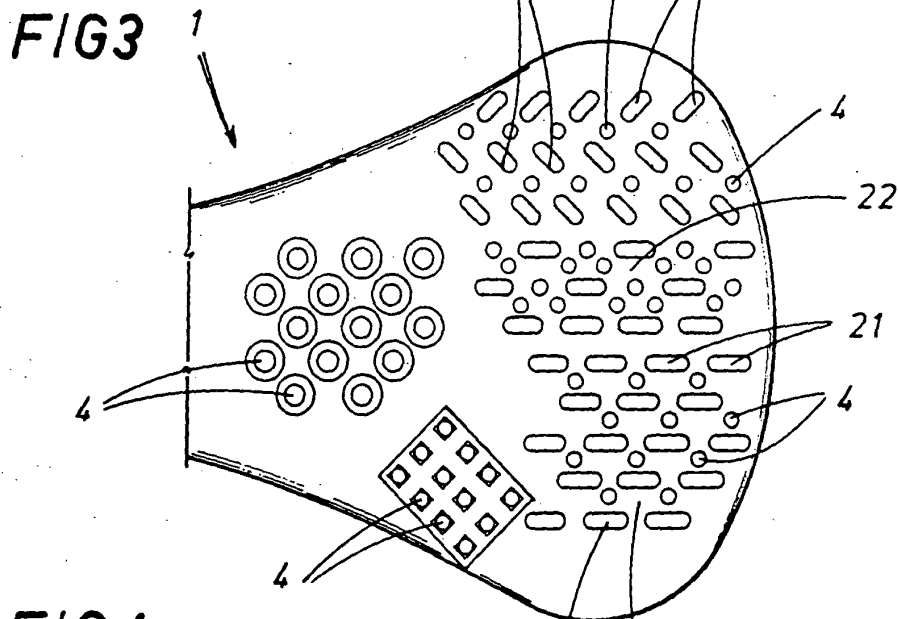
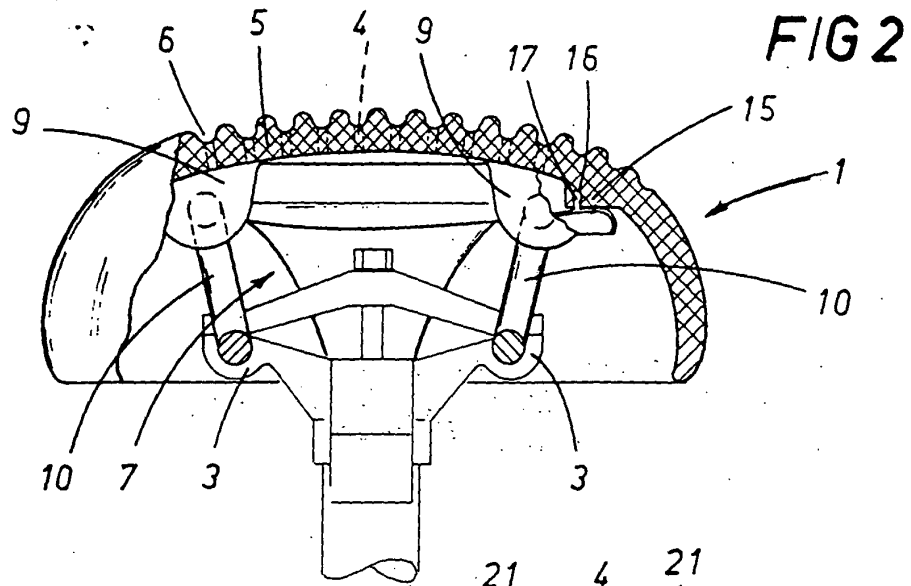
B093U 000072



UFFICIO PROVINCIALE INDUSTRIA
COMMERCIO E ARTIGIANATO
DI BOLOGNA
UFFICIO BREVETTI
IN PUNTO ALBERGO

Geom. Paolo PEDERZINI
ALBO - prot. n. 177

B093L 000072

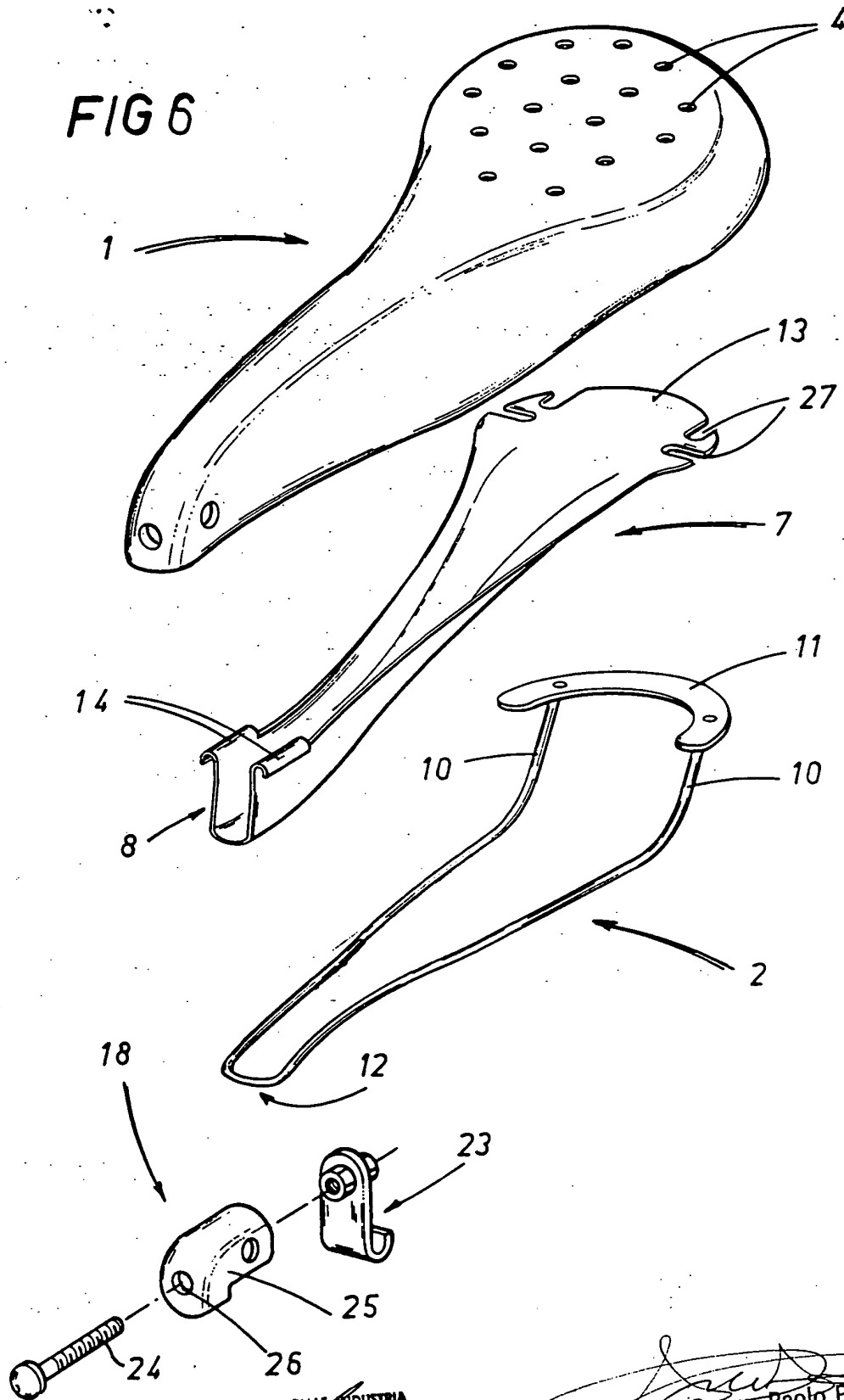


UFFICIO PROVINCIALE INDUSTRIA
COMMERCIO E ARTIGIANATO
DI BOLOGNA
UFFICIO BREVETTI
IL FUNZIONARIO

Geom. Paolo PEDERZINI
ALBO - prot. n. 177

B093U 000072

FIG 6



UFFICIO PROVINCIALE INDUSTRIA
COMMERCIO E ARTIGIANAT
DI BOLOGNA
UFFICIO BREVETTI
E ELIMINAZIONE

Geom. Paolo PÉDERZINI
ALBO - prot. n. 177



US005356205A

United States Patent [19]

Calvert et al.

[11] Patent Number: 5,356,205

[45] Date of Patent: Oct. 18, 1994

[54] SEAT ASSEMBLY WITH A DEFINED FLEXURE REGION, VENTING OR SUPPORT NODULES

[75] Inventors: Nathaniel Calvert, Rochester;
Michael J. Arbeiter, Minneapolis,
both of Minn.

[73] Assignee: InMotion, Inc., Minneapolis, Minn.

[21] Appl. No.: 947,332

[22] Filed: Sep. 18, 1992

[51] Int. Cl.⁵ A47C 7/02

[52] U.S. Cl. 297/452.41; 297/180.14;

297/214; 297/197; 297/452.46; 280/288.4

[58] Field of Search 297/180, 195, 458, 159,
297/453, 452, 460, 284.6, 202, 180.1, 180.13,
180.14, 180.15, 195.1, 452.1, 452.21, 452.23,
452.24, 452.26, 452.41, 452.42, 452.46; 5/451,
909; 280/288.4

[56] References Cited

U.S. PATENT DOCUMENTS

574,342 12/1896 Ray 297/214
 576,969 2/1897 Hunt 297/214 X
 581,464 4/1897 Hollenbeck .
 595,111 12/1897 Perry .
 612,972 10/1898 Leech 297/201 X
 613,927 11/1898 Hunt 297/214 X
 630,911 8/1899 Moore 297/214 X
 1,439,681 12/1922 Alkine et al. 297/180 X
 1,975,405 10/1934 Pryale 208/15
 1,982,516 11/1934 Holmsted 297/453 X
 3,030,145 4/1962 Kottmann 297/180
 3,756,653 9/1973 Worley 297/195
 3,807,793 4/1974 Jacobs 297/214
 3,844,611 10/1974 Young 297/214
 4,098,537 7/1978 Jacobs 297/195
 4,109,333 8/1978 Zmiarovich 5/451 X
 4,451,083 5/1984 Marchello 297/453 X
 4,462,171 7/1984 Whispell 36/3

4,504,089 3/1985 Calvert et al. 297/214
 4,726,624 2/1988 Jay 297/459
 4,751,757 6/1988 Moreno 5/451 X
 4,815,361 3/1989 Chiarella 297/219
 4,898,422 2/1990 West, III 297/202
 4,905,331 3/1990 Hochschild, III 5/451 X
 4,945,571 8/1990 Calvert 2/2
 4,946,220 8/1990 Wyon et al. 297/180
 4,952,439 8/1990 Hanson 428/72
 5,020,852 6/1991 Marion 297/452 X
 5,065,465 11/1991 Nystad 5/451 X
 5,086,528 2/1992 Miller 5/451

FOREIGN PATENT DOCUMENTS

3643174 6/1988 Fed. Rep. of Germany 297/452
 3903303 8/1990 Fed. Rep. of Germany 297/180
 1081145 12/1954 France 297/195
 2589119A 4/1987 France 297/195
 0583023 12/1977 U.S.S.R. 297/195
 0015884 7/1896 United Kingdom 297/195
 0861994 3/1961 United Kingdom 297/195

Primary Examiner—Kenneth J. Dörner

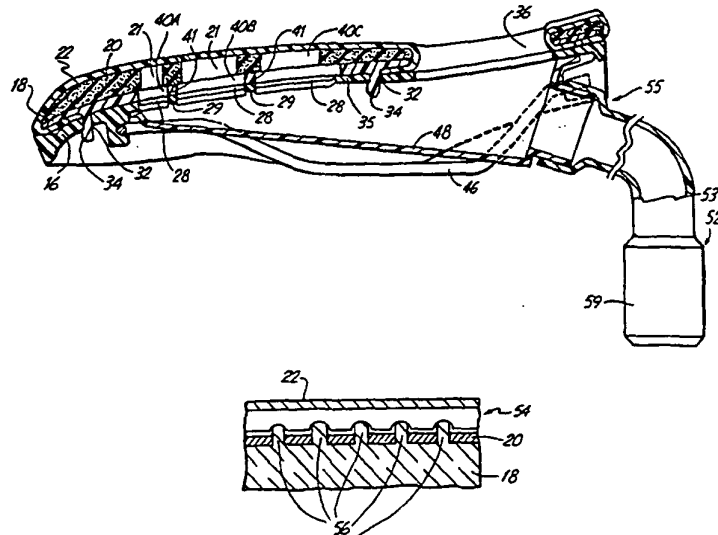
Assistant Examiner—Milton Nelson, Jr.

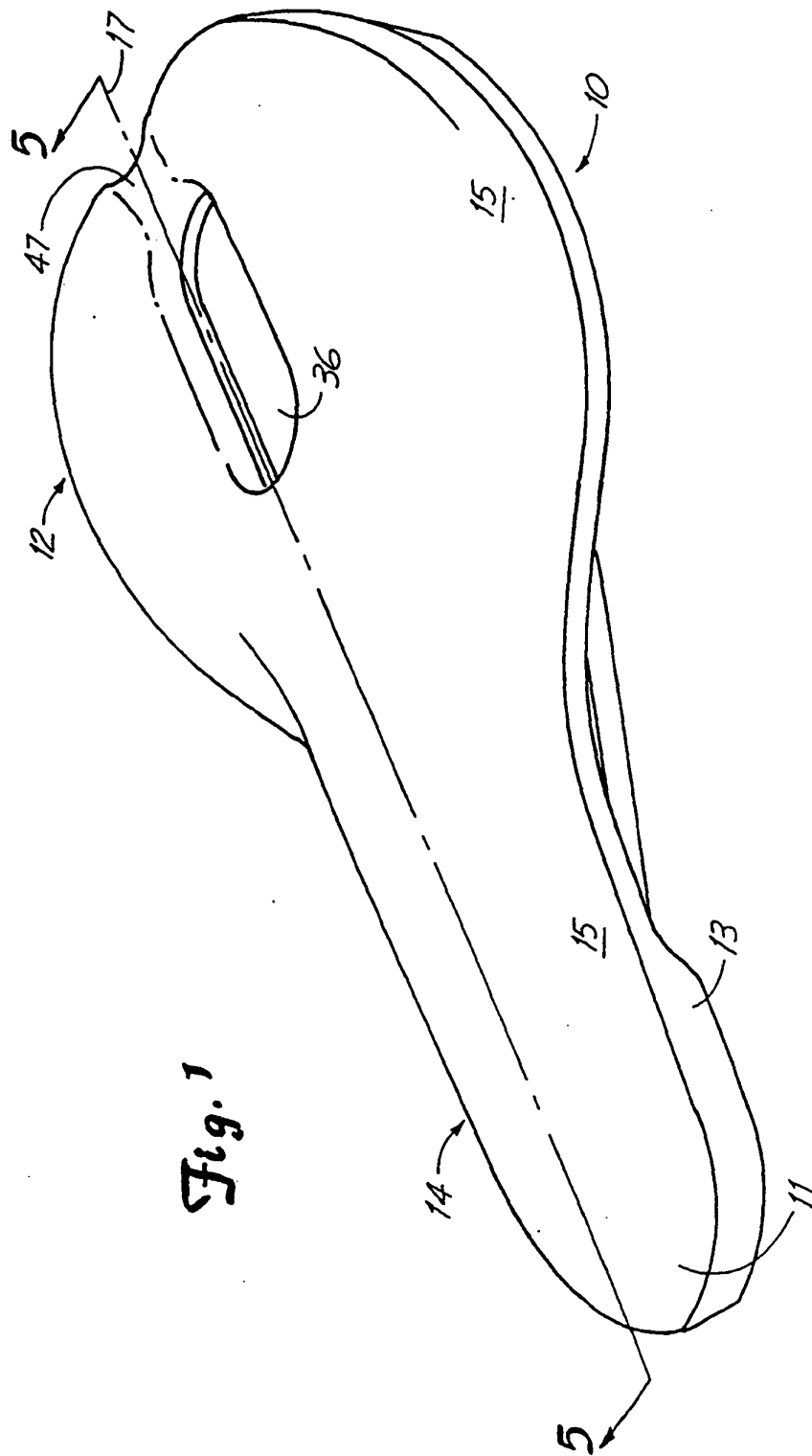
Attorney, Agent, or Firm—Westman, Champlin & Kelly

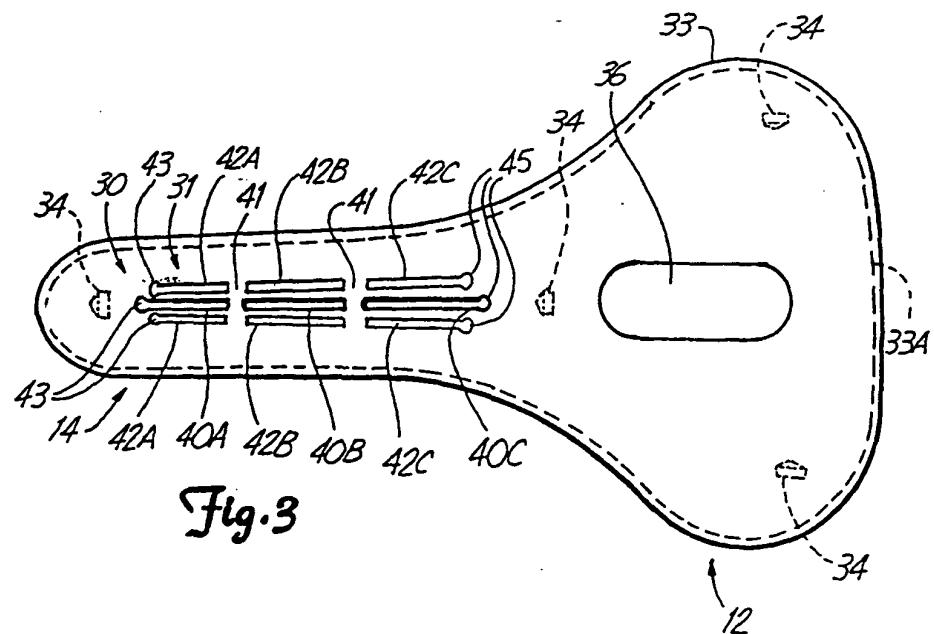
[57] ABSTRACT

A seat assembly having flexure members and ventilation is disclosed. An elongated aperture is cut into a base plate of the seat assembly and flexure members are formed in a support plate of the assembly which is mounted to the base plate. The flexure members deform into the aperture thus providing a rider with additional comfort due to the flexibility of the seat. A venting hole is provided throughout the seat assembly to aid in rider comfort. A forced air ventilation system forces air to flow throughout the seat assembly, thus giving the rider ample ventilation.

18 Claims, 8 Drawing Sheets







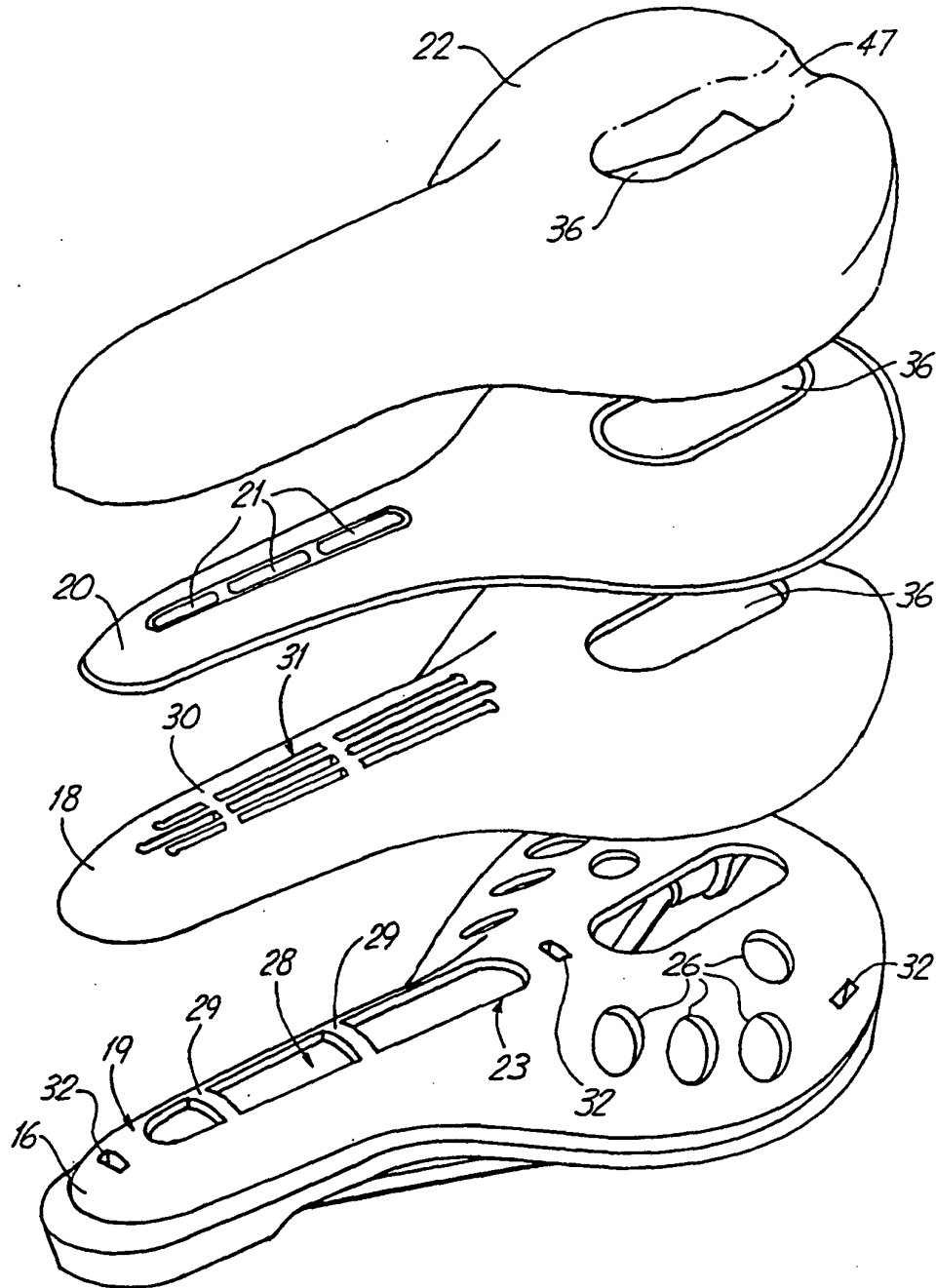


Fig. 4

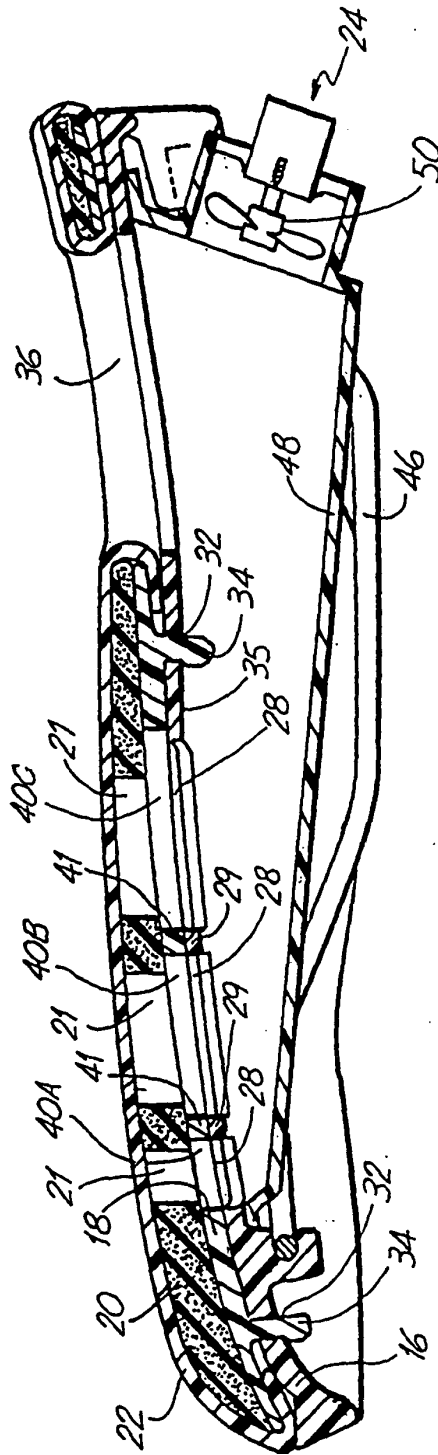


Fig. 5

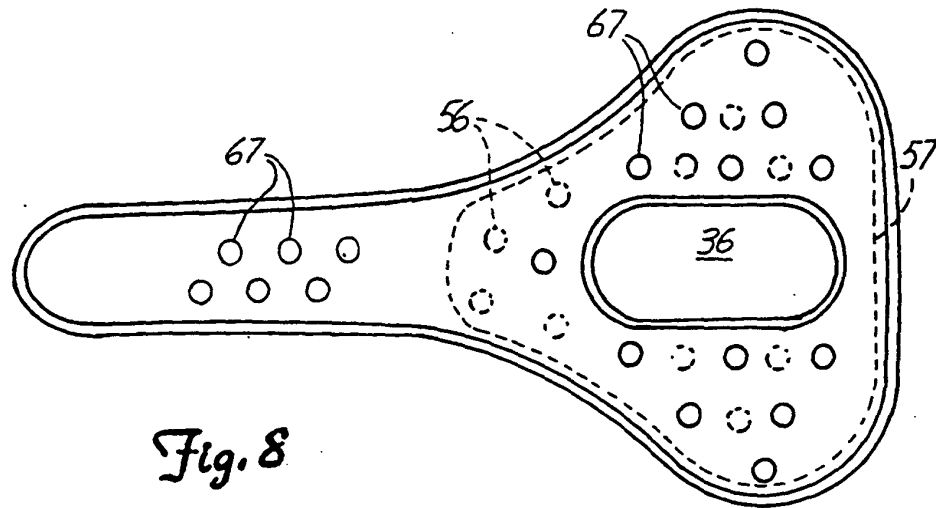


Fig. 8

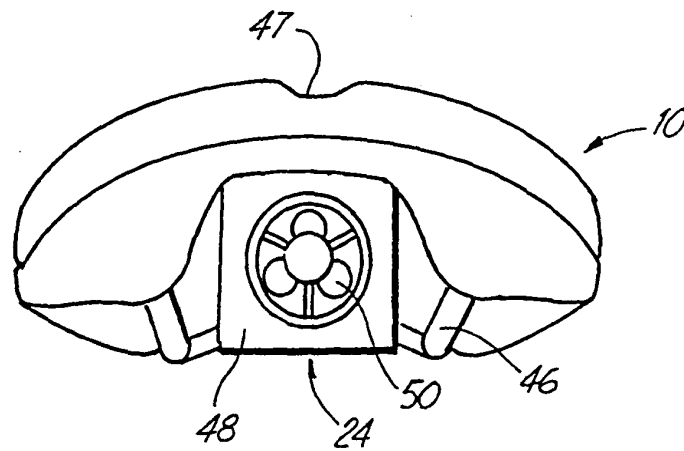


Fig. 6

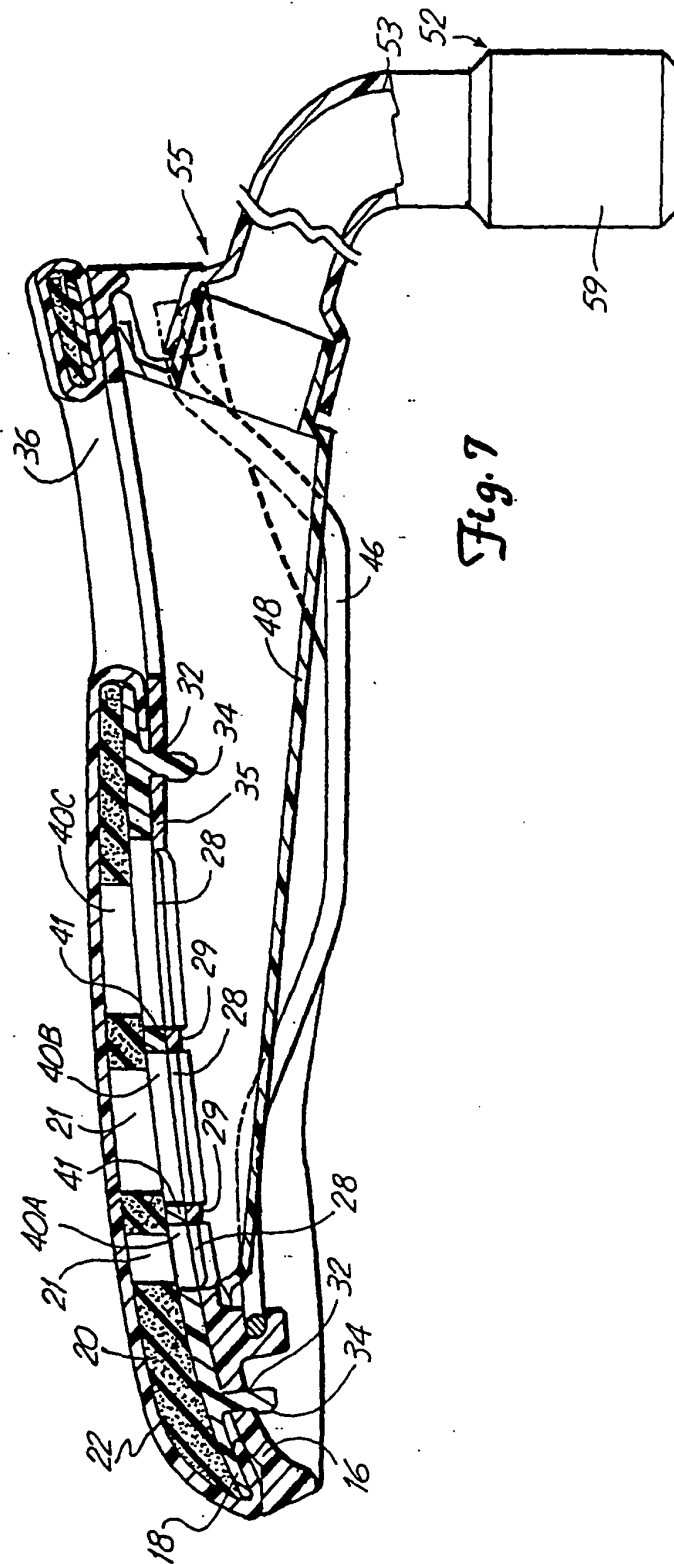


Fig. 7

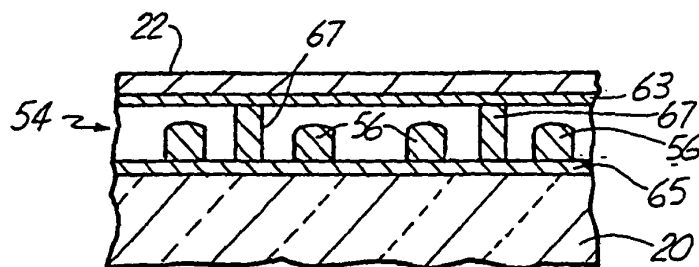


Fig. 9A

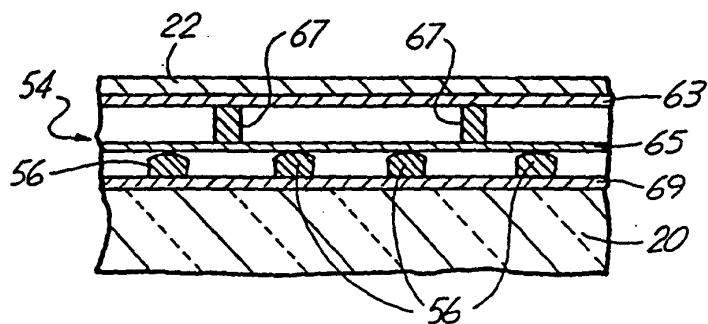


Fig. 9B

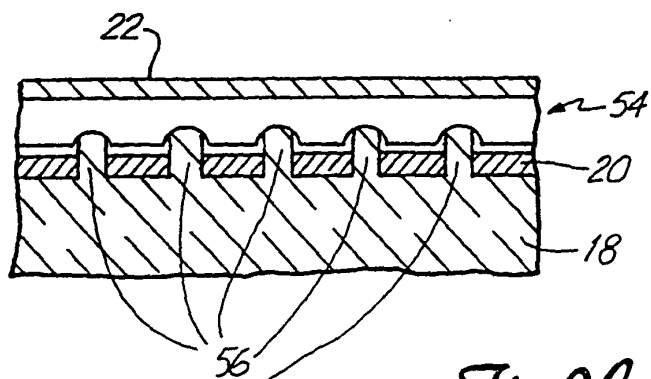
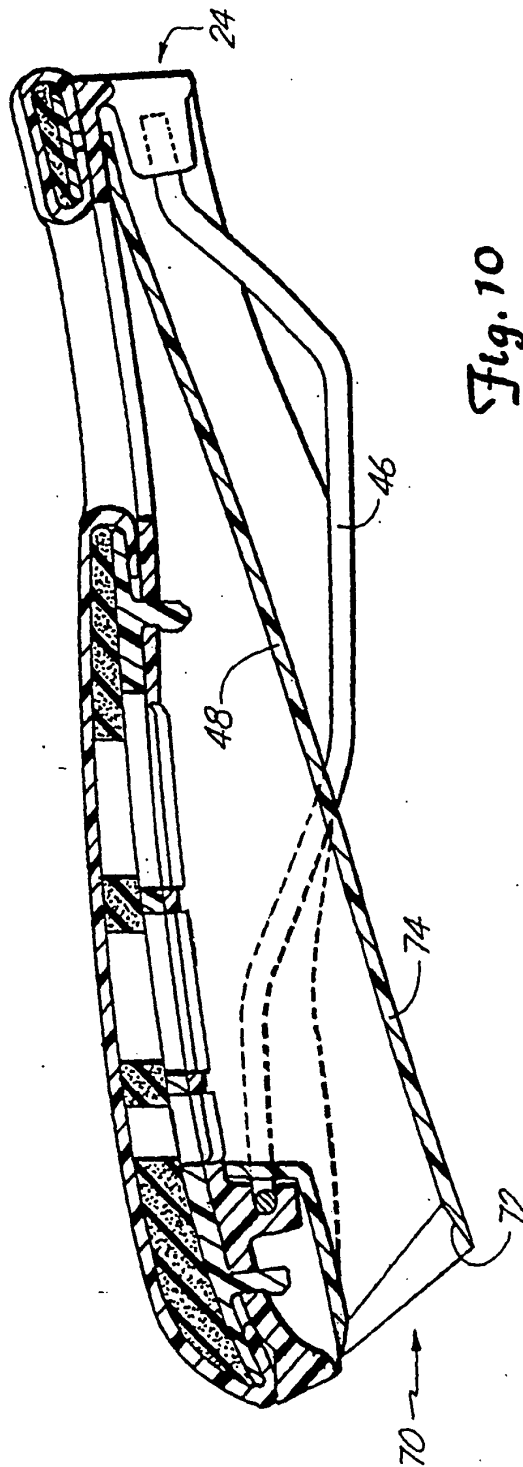


Fig. 9C



ITALIAN MINISTRY OF INDUSTRY, COMMERCE AND TRADES
OFFICE FOR DEVELOPMENT OF MANUFACTURING AND COMPETITION
ITALIAN PATENT AND TRADEMARK OFFICE

Patent for Use
No. 00232876

This patent has been granted for the model which is the subject of the referenced application.

| Application No. | Year | U.P.I.C.A. | [illegible] this application | Classification |
|-----------------|------|------------|---------------------------------|----------------|
| 000072 | 1993 | Bologna | March 30, 1993 | B62J |

Awarded to: Zen Pietro A Rossano Veneto (Vicenza)

Agent: Paolo Pederzini
Address: Bugnion S.P.A.
Via Goito 18
40126 Bologna

Title: Ventilated bicycle seat and kit for its assembly.

Rome, January 21, 2000

Acting official
Giorgio Romani
[illegible signature]

Application No. B093U 000072

Date filed: March 30, 1993

Patent No.: _____

Date issued: _____

TITLE:

VENTILATED BICYCLE SEAT AND ASSEMBLY KIT

I. Summary of the Invention

The bicycle seat is comprised of a steel body (1), which is strong and has holes (4) spread throughout the area intended to serve as a seat, and its upper surface is covered with an air-permeable layer (5) which allows the passage of air through many ventilation spaces (6); the seat is also provided with an air collector channel (7), which may be or is attached below the steel body (1), and which makes substantial contact with the lower surface of the body, at least in the rear portion of the latter, meeting the lower surface of the steel body to form a chamber which opens to the anterior portion of the seat as a [illegible], which when the bicycle is in motion forms an air intake (8) in the aforementioned anterior portion and the outlet through the aforementioned holes (4). (Figure 1).

Fig. 1

[Seal appears]

PROVINCIAL OFFICE OF INDUSTRY, COMMERCE AND TRADES, BOLOGNA

Patent Office

[illegible signature]

Official

Paolo Pederzini

[illegible]

[illegible signature]

61/PP/GF
28654.42.IT.2

BO93U000072

DESCRIPTION

issued for the patent application titled:

VENTILATED BICYCLE SEAT AND ASSEMBLY KIT.

to: Pietro Zen, Italian, residing at Rossano Veneto (VI), at Via Roma No. 98.

Agent: Paolo Pederzini, c/o Bugnion S.p.A.
Via dei Mille, 19 – 40121, Bologna, Italy.

Filed on March 30, 1993, at No. _____

This invention covers a ventilated bicycle seat and the kit for its assembly.

Currently a bicycle seat is comprised of a frame which is mounted to the frame of the bicycle using a mounting head which allows the height of the seat to be adjusted, supports a structure which supports the steel body, comprised of springs or a one-piece body, coated and possibly padded, forming a seat for the bicyclist.

Seats are generally covered with leather or synthetic materials and, in particular for sports use and in warm weather, they do not provide optimal comfort in relation to the interaction between the seat and the corresponding gluteal region which comes into contact with the seat.

The disadvantages due to the bothersome overheating of the parts involved, and the corresponding difficulties related to the trapped perspiration are well known; these problems are very relevant since they are disadvantageous to athletes who compete in races of a certain length and they considerably limit the use of bicycles during the hottest months of the year.

In order to attempt to limit these disadvantages, attempts have been made to date to change the coating materials of the seat or the clothing used by the cyclists. Neither of these attempts have provided an adequate solution.

The scope of this invention is therefore to eliminate the disadvantages mentioned above with a self-ventilating bicycle seat, i.e. a seat provided with means which provide for automatic air cooling.

This invention advantageously provides a seat with an air intake channel, supplied by the movement of the bicycle, which is comprised of a forward air intake, a chamber under the steel body which connects to air discharge holes which penetrate the structure itself, and the upper surface of the structure is provided with an air-permeable layer

— does it have
holes in the seat
or is it an air
permeable material
or is it a mesh?

with appropriate ventilation spaces, so as to support the bicyclist and also allow the passage of air.

Therefore when the bicycle is in motion, a flow of air is achieved which creates a cooling current providing adequate transpiration, as it passes through the air intake, the seat support structure, and then the ventilation spaces between the upper surface of the seat and the gluteal region of the bicyclist.

The technical characteristics of the invention, according to the specified scope, may be clearly seen from the contents of the claims listed below and the benefits of the same will be evident from the following detailed description, which refers to the attached drawings, representing only one possible and non-limiting realization of the invention, in which:

- Figure 1 shows a partial, side cut-away view, with one sample realization of the seat which is the subject of this invention;

- Figure 2 shows a partial, front cut-away view of one sample realization of the seat which is the subject of this invention;

- Figure 3 shows a partial top view diagram of a seat on a steel body, with several various realizations of the upper surface of the steel body, in accordance with this invention;

- Figures 4 and 5 show a partial cut-away side view of two examples of a steel body according to this invention;

- Figure 6 shows an exploded schematic view of one last example of the invention in question.

As per the attached figures, a bicycle seat according to this invention is comprised of a steel body 1 which is strong and a supporting frame 2 with devices 3 for mounting the seat on the bicycle.

The steel body 1 has holes 4 in the region intended to support the bicyclist, which in practice generally comes into contact with the gluteal region, and has a layer 5 in contact with its upper surface which is permeable to air, through the various ventilation spaces 6.

This layer 5, which is elastically flexible, may be a single piece with the steel body and the items applied after manufacture of the same.

In addition, this layer 5 may have a covering 20, which would obviously also be permeable to air, to make the surface more uniform.

Below the steel body 1 there is an air collector 7 which is or which may be connected, and which maintains substantial contact with the lower surface of the steel body 1, at least towards the rear of the latter, so as to form in conjunction with the lower surface of the steel body in the area of the holes 4, a chamber which is open towards the anterior portion of the seat. As the bicycle moves this forms an air collector channel with its intake 8 at the anterior portion of the seat and its outlet through the aforementioned holes 4.

In this manner an air flow is achieved which enters through the collector 7, passes through the steel body 1 of the seat, and then passes through the ventilation spaces between the upper surface of the seat and the gluteal region of the bicyclist, creating a cooling current which provides adequate transpiration.

The ventilation spaces on the surface of the seat may be realized in several ways.

One is shown in Figures 1, 2, 3 and 4, which on the upper surface of the steel body 1 has raised surfaces 21, forming

a plane of support for the bicyclist, with interspersed lower surfaces 22 which have holes 4.

According to another realization, shown in Figure 5, the air-permeable layer 5 is comprised of fibrous material with a grid structure, or an alveolar material with alveoli open on both ends.

As shown in Figures 1 and 2, the support ram 2 may be substantially U-shaped with the prongs 10 bent towards the posterior portion and the steel body 1 may have at the anterior portion of its lower surface a support 19 which is intended for the rear portion of the frame and in the rear two bushings 9 for the prongs 10 of the frame 2; the steel body 1, is also provided in the rear of its lower surface with a number of tabs with cavities which serve as seats 16 for the corresponding pressure locking bolts or pins, which are located at least in the rear portion of the collector 7. The collector 7 is provided with at least one adjustment device 14 (two in the drawing) which are in anterior of the frame 2.

According to the realization shown in Figure 6, the support frame 8 is substantially U-shaped, with the prongs 10 bent towards the posterior portion and connected to a plate 11 on the steel

body 1; in addition connecting devices 18 are provided to connect the anterior portion of the steel body 1 to the anterior portion of the frame 2. In the realization shown in Figure 6, the aforementioned devices 18 are comprised of support components 25 which match up with the most forward part of the seat, provided with at least one hole 26 through which a threaded rod 24 passes, which seats in the corresponding threading of a hook 23 intended for the anterior portion 12 of the frame 2.

The collector 7 shown with the devices for mounting to the seat establishes a rear profile 13 which may be inserted between the aforementioned plate 11 and the corresponding lower rear portion of the steel body 1, and at least one hook 14 (two shown in the drawing) connecting to the forward portion of said frame; When the shape of the frame 2 is such that it interferes with the collector 7, the collector may have tabs or notches 27, which correspond to the attachment points to the frame 2.

For the more effective passage of air the collector 7 may be closed against the lower surface of the structure 1 over at least part of the rear portion of the collector.

The collector 7 may be connected to the lower surface of the steel body 1 using adhesive.

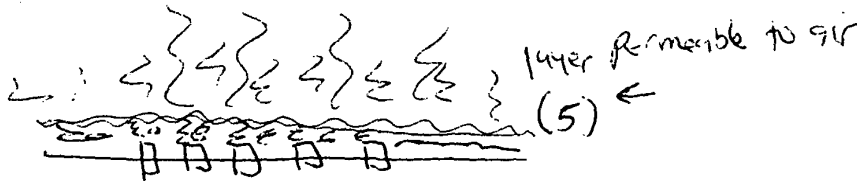
A ventilated seat may also be made using a known steel body, provided with holes, a collector similar to that described and an air-permeable covering, possibly contained in a covering which will facilitate mounting the seat on the steel body.

The invention as conceived may be modified and may have many variants, all falling within the scope of the invention. Furthermore, all details may be replaced with technically equivalent items.

CLAIMS

1. A bicycle seat comprised of a steel body (1) which is mechanically strong and a support frame (2) provided with means (3) for mounting the seat on the bicycle, characterized by the fact that the steel body (1) has various holes (4) in the support zone, and that it has, in contact with its upper surface, a layer (5) which is permeable to air through several ventilation spaces (6), and by the fact that it has an air collector (7) which is or may be attached inside of the steel body (1), and which is substantially in contact with the lower surface of the steel body, in the area of the rear portion of the latter, thus forming with the lower surface of the steel body in the area of the holes (4) a chamber which is open towards the anterior portion of the seat, so as to form, as the bicycle moves, an air intake channel (8) in the aforementioned anterior part and an outlet through the specified holes (4).

2. A bicycle seat according to Claim 1, characterized by the fact that the aforementioned steel body (1) has an irregular surface, with portions which are higher (21), forming a plane



of support for the gluteal regions of the bicyclist, interspersed with lower portions (22) which have the referenced holes (4).

3. A bicycle seat according to Claim 1, characterized by the fact that the aforementioned air-permeable layer (5) is comprised of a fibrous material with a grid or alveolar structure with alveoli open on both ends.

4. A bicycle seat according to Claim 1, characterized by the fact that the aforementioned air-permeable layer is elastically flexible.

5. A bicycle seat according to Claim 1, in which the aforementioned support frame (8) is substantially U-shaped, with prongs (10) bent towards the rear and in which the aforementioned steel body (1) has, on its lower surface and forward a support (19) intended to meet with the anterior portion of the frame and in the rear two bushings (9) for the prongs (10) of the frame (2), characterized by the fact that the aforementioned body (1) has in the rear portion of its lower surface a number of tabs (15) with a cavity which serve as seats (16) for the corresponding claw bolts (17) which are inserted into the same by pressure, on the collector (7) in the rear, and by the fact that the specified collector (7) is provided with at least one

hook device (14) on the rear of the frame (2).

6. A bicycle seat according to Claim 1, in which the aforementioned support frame (2) is substantially U-shaped, with the prongs (10) bent towards the posterior portion and connected through them to a plate (11) on the steel body (1) and with means (18) on the forward part of said steel body (1) for mounting it to said frame (2), characterized by the fact that the aforementioned collector (7) has means for mounting to the seat comprised of a rear shape (13) which is able to be inserted between the cited junction plate (11) and the corresponding lower rear portion of the steel body (1) and with at least one hook device (14) to the forward portion of said frame.

7. A bicycle seat according to Claim 1, characterized by the fact that the aforementioned air collector (7) is sealed to the lower surface of the steel body (1) at least in the rear portion of the latter.

8. A bicycle seat according to Claim 1, characterized by the fact that the air collector (7) is adhered to the lower surface of the steel body (1).

9. Bicycle seat kit characterized by the fact that it is comprised of:

- one mechanically strong steel body (1), with holes (4) in the area intended to support the bicyclist, and with an air-permeable layer (5) in contact with the upper surface to allow air to pass through various ventilation spaces;
- a support frame (2) provided with means (3) for mounting the seat to the bicycle;
- an air collector (7) which is or may be mounted below said body (1), primarily sealed in contact with the lower surface of the steel body (1) if only in the rear portion of the same, thus forming with the lower surface of the steel body in the area of the holes (4) a chamber which is open towards the anterior portion of the seat, so as to form a channel for the passage of air as the bicycle travels with an intake (8) in the forward part and an outlet through the aforementioned holes (4).

10. A bicycle seat and kit for its assembly according to the foregoing claims and according to the description and illustrations in reference to the units represented in the drawings and for the corresponding scope.

Bologna, March 30, 1993

[Seal appears]

PROVINCIAL OFFICE OF INDUSTRY, COMMERCE AND TRADES, BOLOGNA

Patent Office

[illegible signature]

Official

Agent

Paolo Pederzini

[illegible]

[illegible signature]